



**NOT**  
**is enough**

keynote perspective





# Introduction

We're living in a fantastic new age—a fascinating but also challenging age. This is a time where the world is advancing at a rate that we can barely keep up with. In our present times, powerful technologies and information systems have precipitated a parallel change in the knowledge base. Facts are becoming obsolete faster now, while knowledge built on these facts becomes a lot less durable. InfoWhelm is causing societies to reorganize as it continues breaking down the boundaries between conventional disciplines.

This is altering the very fabric of our society, and affecting the way we work, play, communicate, view our fellow citizens, how we learn, and what's important for us to know. Yet schools in their structure, operation, curriculum, pedagogy and assessment models remain largely the same as they have for decades.

This is a problem because as the world is changing, so are our students. They are neurologically different, and they learn and communicate differently than any other generation of students before them. They will need a whole new set of skills, vastly different from what we needed to help us succeed in a changing world.

This perspective explains why it's necessary for students to develop the essential 21st century fluency skills, and why these skills are needed to contend in the fundamentally different living, working, and learning environment of the Information Age. Being fluent involves learning a transparent and unconscious internalized process that's as natural as riding a bike. A focus on fluency rather than literacy requires educators to completely rethink current assumptions about teaching, learning, and assessment.

We will provide insight into what each one of these essential five fluencies actually means, and cover the key characteristics and values that define what we have come to call the Global Digital Citizen. We'll illustrate to you why it's so important that our children internalize such valuable skills—for their lives today, and for our world tomorrow.

# Out with the Old, In with the New

It's been long known that talking and teaching at students isn't effective. Remember the words of wise Confucius: *I hear and I forget; I see and I remember; I do and I understand.*

Information needs to be internalized to be remembered. It must be moved from short term memory to working or permanent memory. For this to take place, there are four things that have to be happening for them::

- **New information must connect to something the learner already knows and has made meaning of.** Unless that connection is present new content stays in working memory only a few seconds. According to research we discard 98 percent of everything that comes into the brain.
- **Previous knowledge and experiences must be considered.** What your students bring with them into your classroom determines not only what they'll learn, but when and where and even *if* they'll learn. Learning is very personal. It's about relevance to the student, not the teacher.
- **Learners have to be given repeated differentiated learning opportunities over extended time periods.** If they don't get it the first time, you can't just speak slower and louder. It's not that kids are slow. What we encounter here is a different style of learning. Our classrooms must fit the needs of many types of learning styles.
- **Students must be provided with consistent feedback and have their efforts regularly and meaningfully reinforced.** According to video game developers, games are designed requiring a decision to be made every 1 second, and players are positively rewarded for those decisions every 7 to 12 seconds.

These are the things that have relevance and a means of proper connection to students of the digital age. It's the way in which we break down the barrier between ourselves and the unique mind of the digital learner, as well as take steps toward reworking our current one-size-fits-all teaching styles.





## What Students Need and Want

Lets talk about what students are going to need to survive and succeed in 21st century life. First, students need the ability to solve complex problems in real-time. Secondly, students need to be able to think divergently and creatively in both digital and non-digital environments to create novel and useful solutions. Thirdly, they need the ability to think analytically by comparing, contrasting, evaluating, synthesizing, and applying without instruction or supervision—in other words, being able to use the higher end of Bloom’s Taxonomy. Fourth, they must have the ability to collaborate seamlessly in both physical and virtual spaces, and with both real and virtual partners. Finally, they must be able to communicate not just with text or speech, but in multiple multimedia formats.

And how do we do all this, and address the short-term and long-term goals? The starting point is to acknowledge that since the world has changed, our students and how they learn has changed. So our instructional model needs to change to something that parallels the real world.

This can be illustrated by the results of a study performed by the Bertelsmann Foundation on two groups of grade 8 Social Studies students in Michigan in 1998. The first group was taught in our current traditional manner; teacher talks, students listen, and with the use of traditional testing. The second group learned the material through a process-based approach, including collaboration and group activities, the use of technology, and a blend of teacher and peer assessment.

At the end of the year, both groups were each given the same traditional state exam. It's the results, however, that were truly stunning. The test scores were initially the same from both groups. But the real results—and the reinforcement of our notion about the need for a change in how we currently teach—came exactly one year later.

The groups were given the test again, and this time the traditional learners were able to recall only 15 percent of the lesson content. The group that learned through collaboration and project and process learning, however, recalled 70 percent of the content. And they not only were able to remember the content, but also understood its significance and context.

It is this type of teaching and this crucial approach to process-based learning that moves students from *literacy* to *fluency*.





# The Learning Cone

Edgar Dale developed the Learning Cone back in the 1960's. It has been adapted many times through reaffirmed research since then by those such as Glasser and Marzano. Research has determined, after 2 weeks on average, that learners recall the following:

- Less than 10 percent of what they read
- About 20 percent of what they hear, such as in a lecture
- About 30 percent of what they see
- About 50 percent of what they hear and see, using 2 or more media simultaneously
- About 70 percent of content that requires active participation, either in discussion or giving a talk
- More than 90 percent of content that involves these three methods—teaching it to someone else, followed by the application of the content in a real-life task or simulation

All of this is on a continuum, from receiving the information to active engagement. Despite this research many educators continue to teach using “stand and deliver, sit and learn” just the same as the old Industrial Age. It’s factory-style learning, with structure and schedule.

Think about how it was for us growing up. We had movies, TV, radio, telephones—you name it. Compare this to the digital world kids grow up in today. To them, this stuff has always been around. They’ve internalized what has fundamentally changed our world over the last decade.

Do you think we might need to reconsider our old assumptions about education? Are the old ways still working?

Because of exponential times, changes that once took decades now take days. 20th century literacy, reading, and numeracy is no longer enough to provide our students with what they’ll need to be prepared for the world we’re expecting them to create and manage.

It’s our duty to give them more—for both themselves, and for our future.



# Stop Talking and Start Doing

Many educators have gotten away with using this approach for a long time, but we just can't do it anymore. There is an unprecedented pressure on educators today.

As our students are failing, the finger is being pointed at teachers. In many cases, a teacher's salary and employment are being tied to student performance. In the panic to meet the mandates of NCLB, to cram as much information into students heads as possible, we are missing the point.

We have to present relevant real-world problems and have our students develop real-world solutions. In short, we need to stop talking and start doing.

We want knowledge to stick, so we can't continue to do teaching-as-talking, which we know doesn't work. If we want to move from 10 percent retention to the 90 percent retention, we have to move to a structure of problem and process-based learning.

We have to present relevant real-world problems and have our students develop real-world solutions. In short, we need to stop talking and start doing.

Increasingly we are discovering that with this generation of students, stand and deliver just won't work in the world we live in. Why? Because the world outside of education has fundamentally changed in the past ten years and continues to change at an accelerated rate.

Next, we will take a look at the new skills that our students will need to meet the challenges of a world of the future, where evolution brings change, and where change can bring opportunity. These are what we call the Five Fluencies.

# The Five Fluencies

At the very heart of the 21st Century Fluency Project are the Five Fluencies. We call them *fluencies* and not *skills* because we believe this level of proficiency—not just literacy, but fluency—should be the goal when we are teaching students the basic skills that are essential for functioning in life.

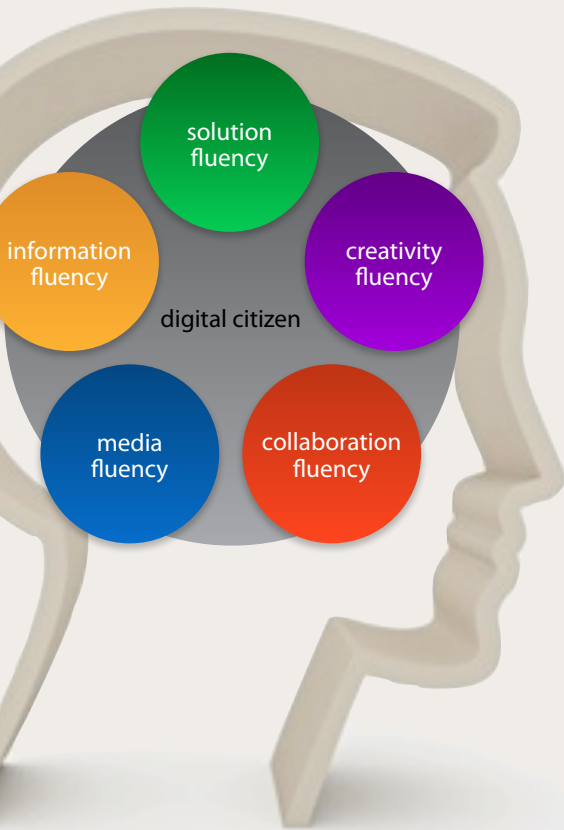
It's important to note that these are not optional skills for our students, or for us. Everyone living in the 21st century and beyond will need these abilities.

They must be cultivated by every teacher in every subject, and at every grade level. And they will mean the difference between success and struggle for the students of our current Information Age.

## Solution Fluency

Our education system has taught problem-solving in a show-and-tell manner (we show students the problem, and tell them how we got the answer) that has fostered a culture of dependency, rather than discovery. But if you look at today's economy, you'll discover that most left-brain tasks are already automated or outsourced via Internet in a global economy, leaving jobs that require whole-brain thinking. This means creativity and problem-solving applied in real time. The 6D system is a logical, thorough, and relevant approach for tackling problems:

- **Define** the problem, because you need to know exactly what you're doing before you start.
- **Discover** a solution, because planning prevents wasted effort.
- **Dream** up a process, one that is suitable and efficient.
- **Design** the process in an accurate and detailed action plan.
- **Deliver** by putting the plan into action by both producing and publishing the solution.
- **Debrief** and foster ownership by evaluating the problem solving process.







## Information Fluency

Because of InfoWhelm, data is increasing dramatically, facts are becoming obsolete faster, and knowledge built on these facts is less durable. Information fluency is the ability to unconsciously interpret this avalanche of data in all formats, in order to extract the essential and perceive its significance. Information fluency has 5 As, which are:

information  
fluency

- **Ask** good questions, in order to get good answers.
- **Access and acquire** the raw material from the appropriate digital information sources, which today are mostly graphical and audiovisual in nature.
- **Analyze and authenticate** and arrange these materials, and distinguish between good and bad, fact and opinion. Understand bias and determine what is incomplete to turn the raw data into usable knowledge.
- **Apply** the knowledge within a real world problem or simulation using a VIP action (vision into practice).
- **Assess** both the product and the process, which is both a teacher and a student practice.

## Creativity Fluency

Creativity fluency how artistic proficiency adds meaning through design, art, and storytelling. We are all creative people. This means that creativity can be taught and learned like any other skill. It's a whole brain process that involves both hemispheres working together. There are 5 Is to Creativity fluency:

creativity  
fluency

- **Identify** the desired outcome and criteria.
- **Inspire** your creativity with rich sensory information.
- **Interpolate** and connect the dots by searching for patterns within the inspiration that align with your desired outcome and criteria from Identify.
- **Imagine** is the synthesis of Inspire and Interpolate, uniting in the birth of an idea.
- **Inspect** the idea against the original criteria and for feasibility.



## Media Fluency

In our multimedia world, communication has moved far beyond the realm of text. Our visual learning capacity needs stimulation with rich media from a variety of different sources. But it's more than just operating a digital camera, creating a podcast, or writing a document. There are two components of Media fluency—one for *input* and one for *output*.



### media fluency

- **Listen** actively and decode the communication by separating the media from the message, concisely and clearly verbalizing the message and verifying its authenticity, and then critically analyzing the medium for form, flow, and alignment with the intended audience and purpose.
- **Leverage** the most appropriate media for your message considering your content or message and what the desired outcome is. Then consider the audience, your abilities, and any pre-determined criteria. From here, the application of the other fluencies is used to produce and publish your message.

## Collaboration Fluency

More and more, working, playing, and learning in today's digital world involves working with others. It is the spirit of collaboration that will stimulate progress in our global marketplace, in our social networks, and in our ability to create products of value and substance. Collaboration fluency is the ability to successfully work and interact with virtual and real partners. The 5 Es of Collaboration fluency are:



### collaboration fluency

- **Establish** the collective, and determine the best role for each team member by pinpointing each team member's personal strengths and expertise, establishing norms, and the signing of a group contract that indicates both a collective working agreement and an acceptance of the individual responsibilities and accountability of each team member.
- **Envision** the outcome, examining the issue, challenge, and goal as a group.
- **Engineer** a workable plan to achieve the goal.
- **Execute** by putting the plan into action and managing the process.
- **Examine** the process and the end result for areas of constructive improvement.





## Global Digital Citizen

The digital citizen uses the principles of leadership, ethics, accountability, fiscal responsibility, environmental awareness, global citizenship, and personal responsibility, and considers his or her actions and their consequences. The ideal Global Digital Citizen is defined by the presence of 5 main qualities:



**Personal Responsibility** in ethical and moral boundaries, finance, personal health and fitness, and relationships of every definition.



**Global Citizenship** and its sense of understanding of world-wide issues and events, respect for cultures and religions, and an attitude of acceptance and tolerance in a changing world.



**Digital Citizenship** and the guiding principles of *respecting* and *protecting* yourself, others, and all intellectual property in digital and non-digital environments.



**Altruistic Service** by taking advantage of the opportunities we are given to care for our fellow citizens, and to lend our hands and hearts to these in need when the need is called for.



**Environmental Stewardship** and its common sense values about global resource management and personal responsibility for safeguarding the environment, and an appreciation and respect for the beauty and majesty that surrounds us every day.

## Our Students, Our Future

In the end, our job as educators should no longer be just to stand up in front of our children and show them how smart we are and how stupid they are. The problem is that, as educators, we simply don't understand how different our digital generation really is. Neurologically speaking, kids today aren't just a little different; they're completely different.

If we continue to do things that we already know aren't working, we have to consider just who really has the learning problem ... because it certainly isn't the kids.

Sure, we want understanding. We want content retention and a measure of success on school exams, state exams, AP, or ACT exams. We want to address and exceed the mandates of NCLB. We want children to demonstrate proficiency beyond content recall. Well, if this truly is what we want, then we can't just stand up and lecture to them.

If we continue to do things that we already know aren't working, we have to consider just who really has the learning problem ...



If the desire is for our kids to graduate as more than just highly educated useless people who are good at school but not adequately prepared for life, then our emphasis as professional educators has to be on much more than just content recall.

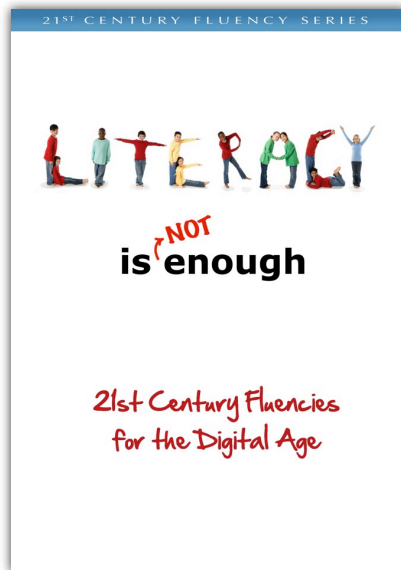
We're talking about the skills of critical thinking, problem solving, and the 21st century fluencies that move beyond theory. We're talking about the practical application of what is learned by giving problems first, and teaching second. So ask yourself:

**Where do you go from here?**

**What do you know now that you didn't know before?**

**What new ideas are you going to tell your friends, family, and colleagues about?**

**What action are you going to take RIGHT NOW?**



### the book and dvd

For more information or to buy a copy of the book, or a DVD of the keynote presentation

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## 21<sup>st</sup> Century Fluency Project

This resource is the collaborative effort of a group of experienced educators and entrepreneurs who have united to share their experience and ideas and to create a project geared toward making learning relevant to life in our new digital age. Our purpose is to develop exceptional resources to assist in transforming learning to be relevant to life in the 21st century. At the core of this project are our [Curriculum Integration Kits](#)—engaging, challenge-based learning modules designed to cultivate the essential [21st century fluencies](#) within the context of the required curriculum. For more information please visit our web site [www.fluency21.com](http://www.fluency21.com).